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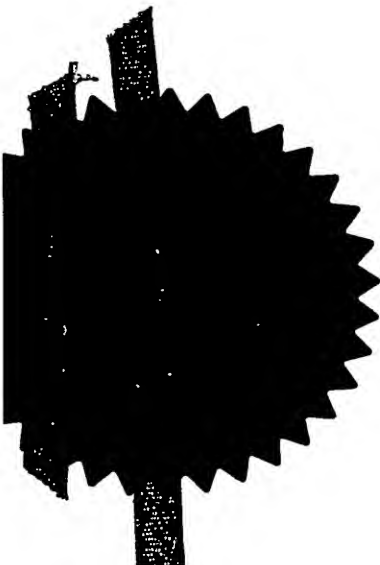
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Dated

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1/77 26 SEP 2003

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26SEP03 E840339-1 D02884  
P01/7700 0500-0322601.6**Request for grant of a patent**

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The Patent Office

Cardiff Road  
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1. Your reference

P35160-CAM/MEA

2. Patent application number

(The Patent Office will fill in this part)

26 SEP 2003

0322601.6

3. Full name, address and postcode of the or of each applicant (underline all surnames)

OTV SA  
L'Aquarene, 1 Place Montgolfier  
St Maurice,  
Cedex, 94417  
France

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

France

8683732001

4. Title of the invention

"Improvements relating to Water Treatment Apparatus"

5. Name of your agent (if you have one)

Murgitroyd &amp; Company

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Scotland House  
165-169 Scotland Street  
Glasgow  
G5 8PL

Patents ADP number (if you know it)

1198015

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number.  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if

Yes

a) any applicant named in part 3 is not an inventor, or

b) there is an inventor who is not named as an applicant, or

c) any named applicant is a corporate body.

See note (d))

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0081134 26-Sep-03 04:40

# Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

8

Claim(s)

2

Abstract

Drawing(s)

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Murgitroyd & Company

Date

26 September 2003

12. Name and daytime telephone number of person to contact in the United Kingdom

Mark Eamshaw

02890 320441

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0081134 26-Sep-03 04:40

1 Improvements relating to Water Treatment Apparatus

2

3 The present invention relates to a water treatment  
4 apparatus programmable pass key.

5

6 Water treatment apparatus including for example  
7 ultra-pure treatment and filtration apparatus for  
8 laboratory, medical, clinical, research and other  
9 uses, are becoming increasingly sophisticated. Thus  
10 the need to ensure correct operation of such  
11 apparatus also requires to keep in step.

12

13 However, operation of such apparatus is still  
14 commonly accessible by any user whether trained or  
15 untrained. It is increasingly not desired to allow  
16 untrained users to carry out any significant  
17 resetting or re-operation of water treatment  
18 apparatus. This includes such operations as  
19 'sanitisation'.

20

21 Sanitisation of water treatment apparatus is an  
22 important operation, and its incorrect operation,

1 such as conducting the operation too frequently or  
2 too infrequently, or whilst other operations are  
3 ongoing, can lead to significant damage to the  
4 apparatus and/or water product therefrom.

5

6 It is an intention of the present invention to  
7 obviate these disadvantages.

8

9 It is also possible to control water treatment  
10 apparatus from one than one access point for either  
11 display and/or control, with these access points  
12 being in separate or different locations. It is  
13 desired to have improved safety levels across the  
14 system to reduce the possibility of errors due to  
15 overlapping control.

16

17 Thus, according to one aspect of the present  
18 invention, there is provided a water treatment  
19 apparatus programmable pass key comprising a data  
20 carrier programmed with one or more predetermined  
21 codes, each code relating to an operation in or of  
22 the water treatment apparatus.

23

24 The pass key could have any suitable size, shape or  
25 design, including the design and style of other  
26 programmable keys such as for tools, cars, computers  
27 or other technical equipment. Generally such keys  
28 are usable with one hand, and are adapted to be  
29 easily storable.

30

1 The data carrier may be any form of programmable  
2 data carrier known in the art, generally including a  
3 computer chip or chips.

4  
5 The operation(s) of the water treatment apparatus  
6 include all those known in the art, including any  
7 type of treatment of water, such as filtration,  
8 sanitisation or recirculation, and any type of  
9 reprogramming of the water treatment apparatus to  
10 provide different flow rates, levels of filtration,  
11 etc, as well as servicing operations of the  
12 apparatus.

13  
14 The term "water treatment apparatus" as used herein  
15 includes a complete or stand-alone apparatus, as  
16 well as components or parts or fittings of water  
17 treatment apparatus, such as individual treatment  
18 units or replaceable or consumable parts such as a  
19 resin cartridge, as well as multi-site apparatus  
20 having more than one user or user-operable  
21 interface.

22  
23 The latter apparatus can often be in different rooms  
24 or even buildings, often leading to complications  
25 where different users are using the same apparatus  
26 at the same time, but desiring different operations  
27 therefrom. The pass key of the present invention  
28 ensures that certain operations such as sanitisation  
29 can be limited to one or more authorised users.

30 -

31 Multiple access points may be connected across a  
32 network as known in the art, such as via an RS485

1 connection across a Local Area Network (LAN). Each  
2 access point may be individually programmed to have  
3 access to different operations, display screens or  
4 alarms. The access points may be configured to only  
5 allow one controller to be used at any time or may  
6 indicate the location of any network activity.

7  
8 It may further be preferable to limit the location  
9 of activation of certain operations, such as  
10 sanitisation, to certain control points such as the  
11 location of chemical addition or storage.

12  
13 The pass key of the present invention is preferably  
14 separable from the water treatment apparatus, and so  
15 includes an electronic circuit which can co-operate  
16 with an electronic circuit in the host water  
17 treatment apparatus. The co-operation of the pass  
18 key and water treatment apparatus may be one way,  
19 either from the pass key to the apparatus or vice-  
20 versa, or two way.

21  
22 The pass key and the water treatment apparatus can  
23 communicate via any form of transmittable waveform,  
24 analogue or digital, including optical and magnetic  
25 contacts. Preferably these circuits communicate by  
26 physical electrical contact for maximum robustness  
27 and confirmation of connection, and to minimise  
28 interference by other means of communication.  
29 Preferably co-operation of the circuits is only  
30 possible when the communication is correctly  
31 created, and this is only achieved when the pass key

1 is correctly connected, installed and/or fitted with  
2 the host water treatment apparatus.

3

4 Such keys are known in the art, for example from  
5 Dallas Semiconductor Corp. (Dallas TX, USA). Their  
6 key is scanned and the correct type is confirmed  
7 before the serial number stored in the non volatile  
8 memory is checked prior to allowing access to the  
9 functions programmed for that device.

10

11 The pass key preferably includes a memory capacity  
12 and an ability to read/interrogate the water  
13 treatment apparatus, and/or vice versa.

14

15 The pass key may also include a database having  
16 relevant data relating to the water treatment  
17 apparatus such as validation information, process  
18 information, and/or manufacturing information.  
19 Typical information includes, but is not limited to,  
20 date of manufacture, date of the or each servicing  
21 and/or testing and/or other operation, the user,  
22 process parameters and data, quality control  
23 details, and possibly a unique reference code.

24

25 Thus, the present invention extends to a water  
26 treatment apparatus programmable pass key as herein  
27 before defined in combination with a water treatment  
28 apparatus adapted to receive and read the pass key.

29

30 The or each code of the pass key may include an  
31 enablement signal to the water treatment apparatus  
32 which signal may include means for the user to



1 uniquely control one or more different operations of  
2 the water treatment apparatus.

3  
4 The pass key or one or more codes in the pass key  
5 may be time-dependent, so as to require renewal or  
6 reactivation after a certain time. The certain time  
7 could be a predetermined time period wherein the  
8 user requires retraining on the water treatment  
9 apparatus, or the apparatus requires different  
10 operations, and the like.

11  
12 Different pass keys could be usable on the same  
13 water treatment apparatus, but each pass key could  
14 have a different number and/or type of code  
15 according to different types of access allowed by  
16 types of different users, such as laboratory  
17 personnel and service engineers.

18  
19 The pass key of the present invention obviates the  
20 need for pass words or pin numbers commonly used in  
21 the art to gain access through a key board or key  
22 pad to technological apparatus, and can ensure that  
23 only authorised personnel can adjust key operating  
24 parameters, such as alarm conditions, auto-restart,  
25 etc.

26  
27 The pass key may also allow access to operational  
28 data such as hours operated, number of stop/starts,  
29 sanitisations and the like.

30  
31 The pass key can also instruct that only key  
32 personnel, perhaps those who have only had the

1 appropriate training, can initiate activities such  
2 as system cleaning and sanitisation. As chemicals  
3 or sanitisation agents can be pumped for some  
4 distance through the complete network of pipes and  
5 outlets for some types of water treatment apparatus,  
6 it is an essential safety aspect that only qualified  
7 personnel undertake this activity, and in such a way  
8 as to avoid conflict with simultaneous operators or  
9 users.

10

11 The pass key of the present invention could also  
12 ensure that for an operation such as cleaning and/or  
13 sanitisation, such a process can only proceed upon  
14 presentation of the key. In many present water  
15 treatment apparatus, sanitisation is carried out by  
16 the manual introduction of relevant chemicals and  
17 when desired, without any ability of the water  
18 treatment apparatus to inhibit any user from  
19 carrying out the operation when unnecessary.

20

21 The cleaning and/or sanitisation process could  
22 include recirculation of the chemicals or sanitants,  
23 reduction of reservoirs levels, discharge to drains,  
24 rinsing with fresh water, all in an automatic  
25 process, such that down time of the apparatus is  
26 minimised due to the use of self-draining reservoirs  
27 with no hideout areas, deadlegs, etc.

28

29 Where there are more than one display or control  
30 stations, the current operation regime can be  
31 displayed and in certain circumstances, such as  
32 during a sanitisation, local operation or control

1 can be inhibited. Alternatively certain operations  
2 may be prevented from initiation by the distant  
3 access point.  
4

5 A further advantage of the present invention is that  
6 it can be timed code, such that after a present  
7 time, possibly installed during programming of the  
8 pass key, it would become inoperable. Thus for  
9 instance, this could be a signal that the pass key  
10 holder must attend ongoing product training at pre-  
11 determined intervals to ensure their knowledge of  
12 the product is kept up to date and their skill codes  
13 revalidated.  
14

15 The present invention extends to a method of  
16 operating a water treatment apparatus, wherein one  
17 or more operations of the water treatment apparatus  
18 are only operable by conjunction of a programmable  
19 pass key as herein before defined with the water  
20 treatment apparatus, said pass key having a or the  
21 code adapted to operate the or each operation.  
22

- 1        Claim
- 2
- 3        1.    A water treatment apparatus programmable pass
- 4            key comprising a data carrier programmed with
- 5            one or more predetermined codes, each code
- 6            relating to an operation in or of the water
- 7            treatment apparatus.
- 8
- 9        2.    A pass key as claimed in Claim 1 wherein the
- 10           data carrier is programmable.
- 11
- 12       3.    A pass key as claims in Claim 1 or Claim 2
- 13           wherein the operation is filtration,
- 14           sanitisation or recirculation.
- 15
- 16       4.    A pass key as claimed in any one of the
- 17           preceding Claims wherein the water treatment
- 18           apparatus has multiple access points.
- 19
- 20       5.    A pass key as claimed in any one of the
- 21           preceding Claims wherein the pass key includes
- 22           a memory capacity and an ability to
- 23           read/interrogate the water treatment apparatus
- 24           and/or vice versa.
- 25
- 26       6.    A pass key as claimed in any one of the
- 27           preceding Claims wherein the pass key is time
- 28           coded.
- 29
- 30       7.    A pass key as claimed in any one of the
- 31           preceding Claims in combination with a water

10

1 treatment apparatus adapted to receive and read  
2 the pass key.

3

4 8. A pass key and apparatus combination as claimed  
5 in Claim 7 wherein the apparatus is accessible  
6 in more than one location.

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